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APPLICATION NO:	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,252	07/11/2003	Kwang-ryul Kim	1293.1914	2436

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EXAMINER

VO, ANH T N

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/617,252	Applicant(s) KIM ET AL.	
	Examiner Anh T.N. Vo	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 20-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/19/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election /Restriction

1. Applicant 's election without traverse of invention group I in Paper filed on 1/10/2005 is acknowledged.
2. Claims 20-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to non-elected invention.

Applicant is reminded that claims 20-26 should be canceled.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The references cited on PTO 1449 have been considered

Specification

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objection

Claim 19 is objected to in that "28" on line 1 should be changed to -18--. Correction is required.

CLAIM REJECTIONS

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 USC 102 (b) as being anticipated by Komuro et al. (US Pat. 4,873,622).

Komuro et al. disclose in Figures 4-5 a liquid jet recording head comprising:

- a substrate (21) which includes an ink chamber (24) where ink is stored, nozzles (25) through which ink in the ink chamber is ejected, and a plurality of pads (unmarked pads is located at an element 26) which apply an electrical signal to the substrate to generate droplets in the ink chamber (Figure 5);
- a flexible printed circuit (FPC) cable which includes a conductor (19) corresponding to each of the pads, each conductor having bonding portions (unmarked portion that connects between two elements 27 and 19) at front ends thereof; and
- connection members (27) which electrically connect the pads to the bonding portions (Figure 5).

Claim 1 is rejected under 35 USC 102 (e) as being anticipated by Patil et al. (US Pat. 6,425,655).

Patil discloses in Figures 1-3 an ink jet pen comprising:

- a substrate (14) which includes ink chamber where ink is stored, nozzles (18) through which ink in the ink chamber is ejected, and a plurality of pads (38) which apply an electrical signal to the substrate to generate droplets in the ink chamber (Figures 1-2);
- a flexible printed circuit (FPC) cable (26) which includes a conductor (32) corresponding to each of the pads (38), each conductor having bonding portions (36) at front ends thereof;
- connection members (40) which electrically connect the pads (38) to the bonding portions (36) (Figure 3); and
- an insulating connection ribbon to fix the plurality of connection members (40) in a parallel arrangement (Figure 2).

Claim 1 is rejected under 35 USC 102 (e) as being anticipated by Akhavain et al. (US Pat. 6,543,880).

Akhavain et al. disclose in Figures 1- 7 an inkjet print head assembly comprising:

- a substrate (32) which includes an ink chamber (323) where ink is stored, nozzles (13) through which ink in the ink chamber is ejected, and a plurality of pads (41) which apply an electrical signal to the substrate to generate droplets in the ink chamber (Figures 1 and 5);
- a flexible printed circuit (FPC) cable which includes a conductor (64) corresponding to each of the pads (41), each conductor (64) having bonding portions (66) at front ends thereof; and
- connection members (68) which electrically connect the pads (41) to the bonding portions (66) (Figure 7).

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2861

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patil et al. (US Pat. 6,425,655) in view of Asano (US Pat. 6,396,665).

Patil discloses the basic features of the claimed invention were stated above but do not disclose the FPC includes a protection layer, protecting the conductor, having an opening through which the bonding portions are exposed is provided in the protection layer and one end of each pad, one end of each connection member and one end of the bonding portions are bonded to each other by hot pressure welding or soldering.

Asano discloses in Figures 11A-11C the FPC includes a protection layer (80, 82) to protect the conductor (76), having an opening (84) through which the bonding portions (67, 68) are exposed is provided in the protection layer (80, 82) and one end of each connection is bonded to each other by hot pressure welding or soldering (see Abstract and column 9, line 11-41).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teaching of Asano into the Patil ink jet pen for the purpose of reinforcing the connection strength between the connecting end portions and the FBC.

CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo. whose telephone number is (571) 272-2262. The examiner can normally be reached on Tuesday to Friday from 8:00 A.M. to 6:00 P.M.

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The fax number of this Group 2861 is (703)872-9306.

A handwritten signature in black ink, appearing to be 'Anh T.N. Vo', with a long horizontal flourish extending to the right.

ANH T.N. VO
PRIMARY EXAMINER

March 5, 2005